SPECIES

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First record of Atlantic Sea anemone (*Telmatactis panamensis* (Verrill, 1869)) on the artificial reefs of the Syrian coast (Eastern Mediterranean)

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ABSTRACT

One individual *Telmatactis panamensis*, has been found on the artificial reefs for the first time on the Syrian coast. We use the external anatomical taxonomy to classify the specimens of the species. This work constitutes the first study in the documentation of sea anemones in Syria.

Keywords: Benthic invertebrates, Eastern Mediterranean, artificial reefs, sea anemones, non-indigenous species, alien species.

1. INTRODUCTION

The Syrian marine waters and the eastern Mediterranean, in general, have shown an increase in the number of species of east Atlantic origins that reached the Mediterranean Sea through the Strait of Gibraltar and, or by sea transport (Gucu et al., 2022). *Telmatactis panamensis* is one of the species recorded for the first time in the eastern Mediterranean (Worms, 2023). Many warm-water species were introduced to the Eastern Mediterranean via the Suez Canal Bianchi, (2007), resulting in the "tropicalization" of the Mediterranean Sea (Bianchi and Morri, 2003). Also, some Atlantic species were introduced to the Eastern Mediterranean through various ways such as ballast water or Alien species as a result of the cultivation of marine species or ocean currents (Ammar, 2021). Sea anemones (Cnidaria, Anthozoa, Actiniaria) are very fascinating group because of the evolutionary flexibility, they can live in many marine environments.

There are 20 species of sea anemones known from the coast of Panama and the Pacific Ocean and 36 species from the Atlantic Ocean Carlgren, (1924), Garese et al., (2009) and Swain, (2009), Acuña et al., (2012) and reported at the World Register of Marine Species Worms, (2022) and in the Global Biodiversity Information Facility (GBIF, 2022). Three species of the genus Telmatactis Gravier, (1916) (Actiniaria, Isophellidae) registered in the Mediterranean Worms, (2015), Rodríguez et al., (2023) *T. cricoides* Duchassaing, (1850), *T. forskalii* Ehrenberg, (1834) and *T. solidago*. *Telmatactis panamensis* distributes from the Gulf of California, Mexico, to the coast of Ecuador and the Galapagos Islands (Fautin et

al., 2007; Rodríguez et al., 2022). The temperature values in the eastern Mediterranean Sea are almost equal to the lowest in the Atlantic Ocean. It is 17°C for the average temperature in the winter months, as it is in the North Atlantic Ocean.

The aim of this study is to report a species of sea anemones for the first time on the Syrian coast. In research conducted on the Syrian coast in 2022, Ammar et al., (2022) registered five new alien migratory species, originating in the Atlantic Ocean and the Indian Ocean, and they are recorded for the first time in the eastern Mediterranean (Ammar et al., 2022). The increase in the number of alien species on the Syrian coast and the transformation of some of them into invasive species that replace local species or compete with them for space and food, as well as their success in settlement, depends on climate changes and changes in the physical and chemical characteristics of the Mediterranean (Zenetos et al., 2022).

2. METHODS

One specimen of *Telmatactis panamensis* was collected by hand from the Ibn Hani site (N35; 35° 44, 7′ E45; 35° 15.8′) on artificial reefs Figure 1 on 15m depth 5/5/2023. We preserved the sample in the marine biology laboratory of the High Institute of Marine Researches (Latakia, Syria) and photographed it to record its color. We fixed the sample in 10% seawater formalin. We studied the specimen morphologically and anatomically.

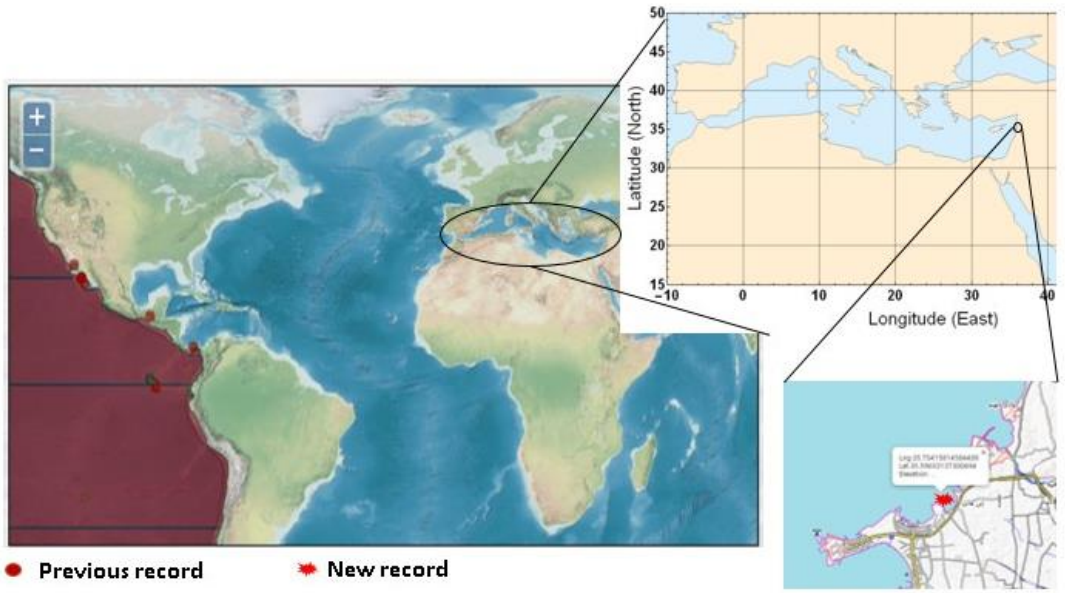

Figure 1 Site of the study.

3. RESULTS

Identification

Phylum Cnidaria
Class Anthozoa
Subclass Hexacorallia
Order Actiniaria
Suborder Enthemonae
Superfamily Metridioidea Carlgren, 1893
Family Andvakiidae Danielssen, 1890
Genus Telmatactis Gravier, 1916

***Telmatactis panamensis* (Verrill, 1869) Figure 2 A, B**

Morphologically and anatomically

The species has a brown and flattened oral disc, and it is smooth and wide (Figure 2A). The tentacles are soft, short, and arranged in 4 or 5 cycles (45–90 in number). They have a thick edge with contractile. The inner cycles are longer than the outer ones. The tentacles are light brown and W-shaped with darker marks at their bases (Figure 2A). The body is cylindrical, 8–25 mm in diameter

and 10–30 mm in height, and about 20g. It has scapula, and scapus. The scapula is brown, soft, and short. The scapus is beige and smooth (Figure 2B). The anemone has a disc to stick on the rigid substrate.

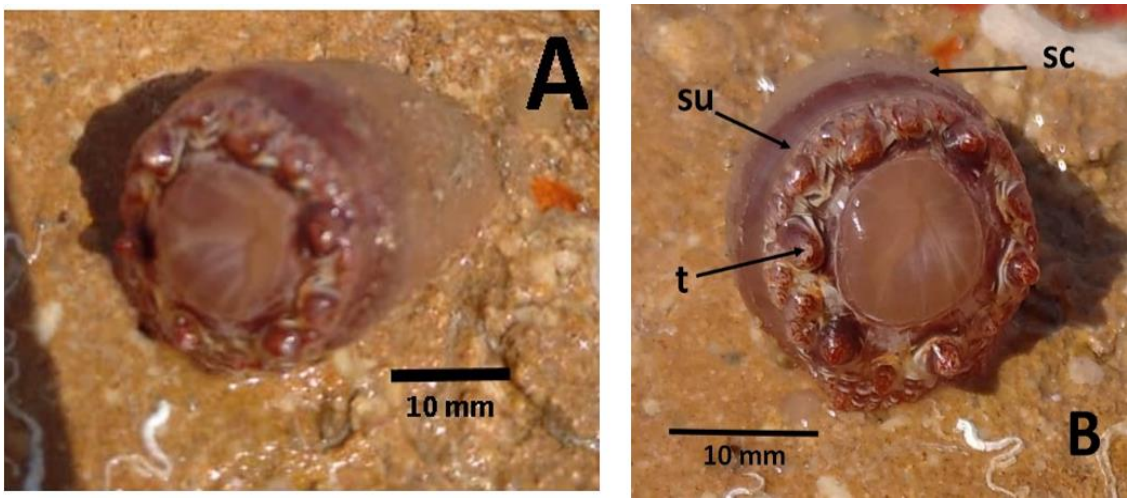

Figure 2A, B (A) lateral view, detail of scapula and scapus; (B) oral view, detail of oral disc and tentacle. Legend: sc = scapus, su = scapula, t = tentacle. Scale bars = 10 mm.

4. DISCUSSION

According to the morphological and anatomical observations of these specimens (Figure 2), and previous research the species is identified as *T. panamensis* (Acuña et al. 2012). This species of Telmatactis has currently known on the Eastern Pacific coast. This species was found on rocky substrates in depth range from 0 to 42 m (Fautin et al., 2007; Acuña et al., 2012). We noted that, alien species settled on the artificial beds, planted in the Ibn Hani area, and this corresponds to the well-known idea of these species for their ability to tolerate difficult factors, and the speed of their settlement on artificial substrates. These species are of origin from the Indian Ocean through the Suez Canal or from the Atlantic Ocean through the Strait of Jabal Tareq, and found a suitable environment for it, where the presence of invasive species was observed in abundance in the Levantine basin compared to the rest of the Mediterranean basin, 9 of 10 invasive species were recorded in the Levantine basin only (Zenetos et al., 2005). It differs from three species of the genus Telmatactis Gravier, (1916) (Actiniaria, Isophellidae) which have been recorded in the Mediterranean Sea: *T. cricoides* Duchassaing, (1850), *T. forskalii* Ehrenberg, (1834) and *T. solidago* Duchassaing, (1850), mainly by the scapula and the tentacles.

5. CONCLUSION

In conclusion, there has been a continuous increase in the number of invertebrate species of Atlantic origins recorded in the eastern Mediterranean (Syria). Artificial reefs may have a role in attracting more non-native species, and this requires continuing to monitor, follow up, and study their relationship with local species, including the *Telmatactis panamensis* species.

Authors' contributions

Main author: Izzat Arabia, He collected the sample, identified it, and he wrote the article.
Coauthor: Izdihar Ammar, Abdel Latif Ali, they contribute to check up the identification of the species and review the article.

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Conflicts of interests

The authors declare that there are no conflicts of interests.

Ethical approval

The ethical guidelines are followed in the study for species observation & identification.

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The study has not received any external funding.

Data and materials availability

All data associated with this study are present in the paper.

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